TRANSPORTATION SCHOLAR REPORT

FOR

KLONDIKE GOLD RUSH NATIONAL HISTORICAL PARK

BY
PEISHAN SHIEH

A NATIONAL PARK TRANSPORTATION SCHOLAR PROJECT
IN PARTNERSHIP WITH:
NATIONAL PARK SERVICE
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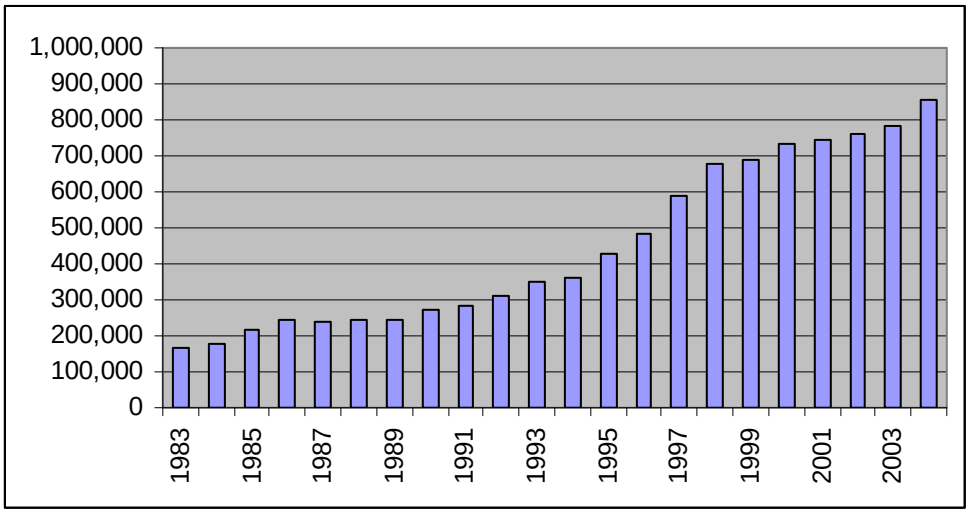
Introduction

The Klondike Gold Rush stampeders have long gone, but the tourists keep coming. Who could have predicted that the waterfront scene of boatloads of would-be miners and their one-year's worth of supplies in 1898 would be replaced by luxury cruise ships and thousands of vacationers? Ever since the dedication of Klondike Gold Rush National Historical Park (KLGO) in 1976, Skagway has undergone dramatic physical changes, especially in the historic district. Old buildings are restored, streets are paved, and stores are filled with tourist-driven commercial activities.

The Skagway Convention and Visitors Bureau has been keeping statistics on visitation since 1983, and the numbers are illustrative of what has happened to Skagway (Figure 1).

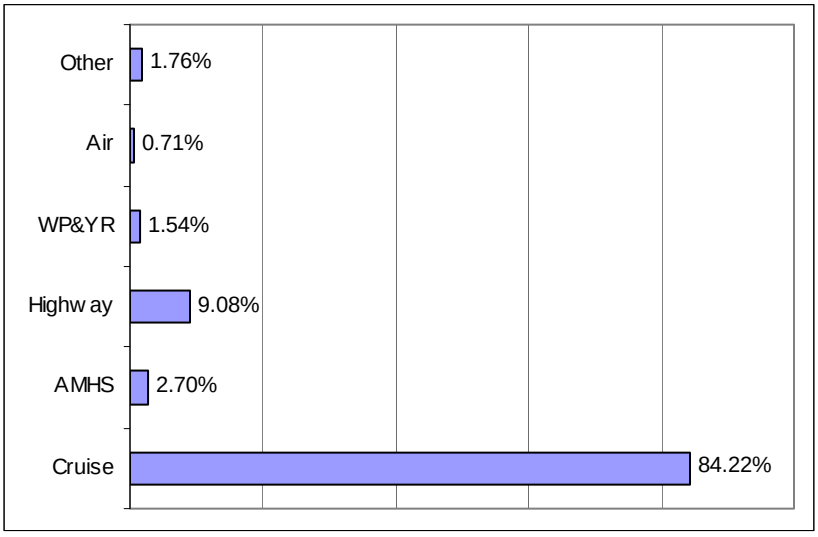
Figure 1: Skagway Visitation Counts 1983-2004



Skagway has witnessed a steady increase in visitation since 1983; it has become a major tourist destination in Alaska. Every year from mid May through September, the historic district of Skagway is inundated by hundreds of thousands of tourists. If we look at the breakdown according to the visitors' arrival by mode of transportation, it becomes clear that the cruise ship passengers constitute a large portion of total visitors to Skagway (Figure 2).[1] The arrival of cruise ships transforms the town not only physically but also financially. From all the vehicular and pedestrian traffic down at the waterfront, one can easily discern where the main group of visitors is. To put some numbers in perspective: in 2004 there were 722,095 cruise ship passengers in Skagway, which constitute 84% of the total visitors.

[1] The percentages are based on the annual visitor statistics released by the Skagway Convention and Visitors Bureau. According to my conversation with Karen Ward, Tourism Assistant at SCVB, the number of visitors from cruise ships does not include the crew members on board. All other numbers except WP & YR include both residents and visitors because various data sources do not make such a distinction. Thus, the number of visitors from cruise ships can be potentially higher than reported.

Figure 2: Visitation Percentage by Mode of Arrival



In 2004 the revenues from tourism-related business amounted to $100,519,114, and the city collected $4,011,697 from its 4% sales tax.[2] Cruise ships have become the economic base for Skagway; without cruise ships Skagway would be a different kind of town.

Although a majority of visitors spend their time in the Skagway historic district, in 2004 about 24,000 tourists visited the Dyea town site/Chilkoot Trail, another KLGO unit. Because most of these visitors first arrive in Skagway, then have to find their way to Dyea, the Park is concerned about whether there are adequate transportation services available for them and other potential visitors to Dyea.

My assignment at KLGO was to articulate and address transportation issues of the visitors and residents as well as to assess the needs for a public transit between Skagway and Dyea.

Skagway historic district unit

A transportation issue may relate to one of three categories: moving vehicles, parking, or pedestrians. Although these categories of traffic problems are sometimes interconnected, isolating and examining each category allows us to pinpoint the root causes of traffic problems. I will use this method to analyze transportation issues in Skagway. But before I do this, let's look at the days and times when the traffic situations are the most problematic.

Peak Days

There are observable vehicular and pedestrian traffic fluctuations according to the cruise ship calendar—for example, days with three or four 2,000-passenger cruise ships certainly have more impact on traffic conditions than days with just one 1400-passenger ship. For 2005, Fridays, Saturdays and Sundays were significantly lower volume days, whereas the days with 3 or 4 large cruise ships, Mondays through Thursdays, were high volume days (Table 1). Thus, during a peak day you are likely to see more tour buses, more frequent SMART bus service, and more trains operating than on a low-visitation day.

[2] Source from the official statistics published in the Skagway News, March 11, 2005.

Table 1: Cruise Ship Capacity for 2005 Season[3]

	Week of	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1	9-May	49	5,171	3,330	3,268	3,642	1,518	2,208
Week 2	16-May	3,356	8,665	7,192	7,880	2,046	3,439	2,194
Week 3	23-May	7,207	8,683	7,096	8,138	2,052	2,210	2,374
Week 4	30-May	7,639	8,581	8,733	7,880	4,080	1,489	4,034
Week 5	6-Jun	6,514	8,581	8,739	7,888	2,052	2,140	5,914
Week 6	13-Jun	7,639	8,581	8,733	7,880	3,006	1,489	3,074
Week 7	20-Jun	6,430	8,581	8,739	7,888	2,136	1,440	3,074
Week 8	27-Jun	7,639	8,581	8,733	7,880	2,046	1,615	3,074
Week 9	4-Jul	8,052	8,581	8,637	7,888	2,052	1,566	3,074
Week 10	11-Jul	7,513	8,581	8,733	7,880	2,046	1,615	3,074
Week 11	18-Jul	6,304	8,581	8,637	7,888	4,602	1,566	3,074
Week 12	25-Jul	8,003	8,581	8,733	7,880	2,046	1,489	3,074
Week 13	1-Aug	8,020	8,581	8,637	7,888	2,910	1,440	3,074
Week 14	8-Aug	7,639	8,581	8,733	7,880	2,046	1,489	3,074
Week 15	15-Aug	7,390	8,581	8,637	7,888	1,950	1,566	3,074
Week 16	22-Aug	7,845	8,581	8,733	7,880	2,046	1,489	3,074
Week 17	29-Aug	6,381	8,581	8,637	7,888	2,052	1,566	3,158
Week 18	5-Sep	8,081	8,581	8,733	7,958	3,966	2,400	4,664
Week 19	12-Sep	7,513	8,581	6,769	7,888	102	1,440	2,124
Week 20	19-Sep	4,385	8,201	7,925	7,582		1,440	
Mode/Average		**7,401**	**8,581**	**8,733**	**7,888**	**2,599**	**1,720**	**3,183**
Average number of visitors on a peak day								8,151
Average number of visitors on a low day								2,501

However, even on a peak day the amount of pedestrian and vehicular traffic is by no means constant throughout the day. There are observable rush hours in the Skagway historic district. Because the amount of pedestrian traffic outweighs the vehicular traffic in this case, I define the peak hours according to the pedestrian traffic, not the conventionally defined vehicular traffic.

PEAK HOURS

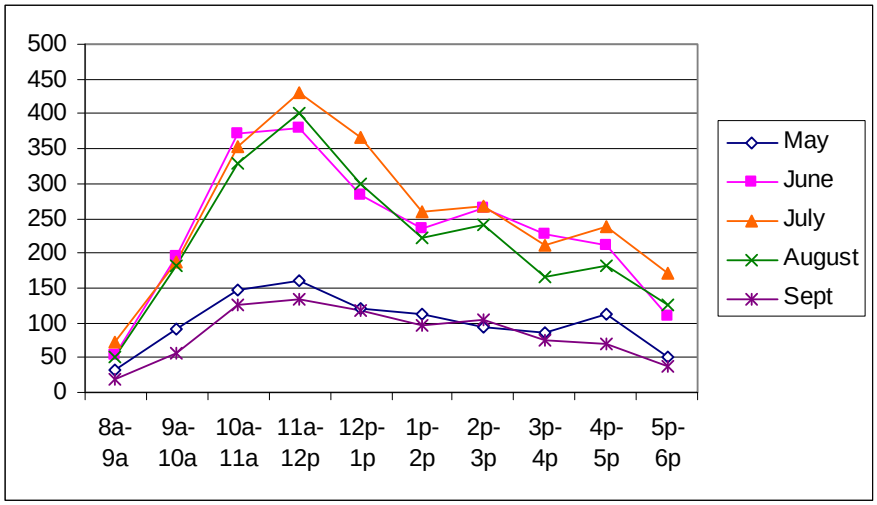
With few exceptions, cruise ships arrive early in the morning and depart in the early evening, which means the cruise ship passengers have only about 8 to 12 hours to spend in Skagway and the vicinity. On top of that, meals are included in the cruise ship package, which means most of the passengers choose to eat on board their ships. Thus tour operators in town have developed sophisticated schedules that allow them to best capture their potential customers.

For example, the M & M Tour Brokerage has learned to adapt their daily tour schedules to accommodate the varying influx of tourists. A good portion of their tours begins in the morning, and 10:30 a.m. seems to be their peak hour. If we look at the KLGO visitor center's automatic visitor counters, the number of visitors coming and going also peaks between 10 a.m. and 12 noon, with an extended peak hour until 1 p.m. in July (Figure 3). These are the hours when visitors appear to be most active, and the street scene reflects the "rush" hours accordingly.

[3] For Tuesday, Wednesday and Thursday, the most frequent value—the mode—is used, and for Friday through Monday an average is calculated instead since there is no particular number that stands out on those days. The shaded numbers are atypical for those days, hence are removed from the computation to better represent the season's cruise ship capacity.

Pedestrian traffic counts taken by my predecessor in this study peak between the mid-morning and early afternoon hours. Her average hourly pedestrian count on Broadway, between the hours of 9:30 am and 1:30 pm, is about 2,524, and the average count is about 2,037 after 1:30 pm. My one-week (June 23 through June 29) traffic counts observed on the west side of Broadway between 2nd and 3rd Avenues between 9:30 a.m. and 1:30 p.m. also show a similar hourly average (Appendix A & B). Based on both of our field observations and for the purpose of this study, I will refer to 9:30 a.m. to 1:30 p.m. as peak hours.

Figure 3: Hourly Mean of Number of Visitors at KLGO VC for 2004 Season



Defining Problems

So does the amount of tourist-related traffic on Broadway present any problems? The pedestrians' omni-presence does slow down vehicular traffic a bit, but from what I observed the tour buses going 5-10 miles an hour are the ones that usually hold up the traffic since other vehicles cannot pass them. This does not necessarily mean it is a bad thing. Slow moving traffic makes the street safer for pedestrians and may explain why there hasn't been <u>any</u> traffic fatality on Broadway to date. Overall, the average speed on Broadway runs between 10 to 15 miles per hour.[4] The speed may be slow for some residents who are in a hurry to make their errands during the lunch hour or for those who are so used to no traffic at all during the rest of the year. The traffic nevertheless moves smoothly in both directions.

The only vehicular traffic backup that regularly occurs is when the train arrives at the depot and temporarily stops traffic on Broadway. The departing trains pick up most passengers on the dock; this reduces the potential crowds waiting at the train depot, located near Broadway. Trains arriving between 11:15 a.m. and 12:15 p.m. are most likely to cause vehicular traffic backups when the stopped trains cross Broadway while preparing for passengers to disembark at the depot. Each train can deposit several hundred passengers on Broadway at once and causes temporary congestion. This doesn't occur every time the train arrives, however. Only the trains longer than 13 cars cause such a blockage. On a peak day this may occur three times during the peak hours, and it lasts at the most about 8 minutes, and most of the delays are less than that.

[4] The average speed of SMART, which runs daily during the cruise ship season from 7:30 am to 9 pm, is about 10 to 15 miles per hour on Broadway.

But this congestion is unavoidable as long as the depot and tracks remain in their present location and configuration. From my observations, residents and commercial drivers have learned to turn onto 1st or 2nd Avenues rather than continue on Broadway in order to circumvent the delay when they see a train at the depot.

How about the convergence of all the varied modes of transportation on one single street? On a peak day during the peak hours, Broadway can have hundreds, if not thousands, of pedestrians, in addition to bicycles, pedicabs, horse-drawn carriages, private vehicles, SMART buses, tour buses, and motorcoaches. When all these users converge, don't they have conflicts sharing the street? If we are to look at how the traffic flows between the waterfront and the historic district, the intersection between 2nd and Broadway seems most likely to have a problem. All visitors arriving in Skagway, except those who arrive via the Klondike Highway, approach the historic district from the south, and this intersection shares a majority of the traffic.

I have seen about 6 or 7 vehicles waiting to turn or go through this intersection a few times (Photo 1-4). I was surprised by the short amount of time that it took to clear the intersection—it lasted less than a minute though the drivers had to inch out into the intersection to pull through or make the tight turn while watching out for the pedestrians who meander around and between vehicles. Considering there is no traffic light nor pedestrian crossing signal, the traffic at this intersection flows pretty well. There seems to be a concerted effort, amongst tour operators especially, to not get in each other's way, hence avoiding conflicts and keeping the flow moving, albeit slowly.

For those vehicles continuing on Broadway, sharing the street does not seem to present any problems either. The results from my one-week (June 23 through June 29) traffic counts on the west side of Broadway between 2nd and 3rd Avenues during the peak hours also confirmed what I observed: that the amount of traffic on Broadway is simply too low to cause any significant problems. The recorded number of commercial vehicles on Broadway varies from 60 per hour on Thursday to 27 per hour on Saturday.[5] If all vehicular modes are added to that hourly total, (SMART buses, private and government vehicles, pedicabs and bicycles), the average number is about 161 vehicles per hour—that's 2.68 vehicles per minute, a very low number (Table 2).

Table 2: Vehicle Counts by Type during Peak Hours

		Hourly	SMART	Commercial	Private	Bicycle	Gov't	Total
22-Jun	Wednesday	11:15-12:15	30	35	45	16	1	127
23-Jun	Thursday	10:30-11:30	36	60	43	14	2	155
23-Jun	Thursday	10:15-11:15	38	58	37	11	2	146
24-Jun	Friday	10:30-11:30	19	42	77	22	1	161
25-Jun	Saturday	11:00-12:00	4	27	62	26	0	119
26-Jun	Sunday	12:00-13:00	15	44	74	51	3	187
		Hourly	SMART	Commercial	Private	Bicycle	Gov't	Total
27-Jun	Monday	11:15-12:15	37	42	78	29	4	190
27-Jun	Monday	11:00-12:00	38	39	65	24	5	171
27-Jun	Monday	10:45-11:45	33	53	64	30	5	185

[5] A commercial vehicle is defined as any vehicle with a commercial sign/logo on it; rental cars and horse-drawn carriages are also included.

28-Jun	Tuesday	12:00-13:00	31	59	52	29	0	171
29-Jun	Wednesday	09:45-10:45	36	51	51	26	1	165
29-Jun	Wednesday	10:00-11:00	33	54	47	30	1	165
29-Jun	Wednesday	10:15:11:15	32	54	34	26	1	147
Overall	Average		29	48	56	26	2	161
	Per Minute				2.68			

If the amount of vehicular traffic on Broadway does not present a problem, then maybe parking and pedestrian traffic are what is at issue here. Complaints about a lack of employee parking are common amongst those who work on Broadway and drive to work. For those who walk or bike to work, there is no problem whatsoever. Since there is only 20-minute to 1-hour parking on Broadway, people use side streets for all-day or long-term parking. Some side streets are more occupied than others but usually there is parking available. This perceived problem is held by the residents who work year-round and are used to parking near where they work. The slight increase in the amount of vehicular traffic resulting from tourism as well as seasonal employment means that sometimes their favorite parking spots may be taken, and they have to park somewhere else. Unless there is designated employee parking available, there is presently no guarantee that one can park near one's workplace. I think it's the inconvenience of walking a couple of blocks to where they work that is the problem, not the notion of "lack of available parking".

Again the number of vehicles doesn't contribute to an actual parking shortage problem on Broadway. Daily samples of the number of parked vehicles on Broadway between 2nd and 6th were taken from June 6 through July 6. The overall average number of parked vehicles between 9 a.m. to 5 p.m. is about 12 cars (Appendix C). This average includes 2 to 4 parked commercial vehicles that I regularly counted. Based on this observation, there is always short-term parking for residents as well as for visitors to park while they shop.

Relating to issues regarding pedestrians, inattentive pedestrian crossings and their spillover from sidewalks on to the street seem to be the main concerns here. There is no question that the most visible presence in Skagway during the cruise ship season is pedestrians. They are found everywhere in the historic district. You find visitors on boardwalks browsing from store to store, and some of them walking on the parking lane in the street to overtake slow-moving pedestrians. You also find a few of them zigzagging from one side of the street to the other, many of them taking pictures as they stroll down the street. At times the middle of the street seems to be the preferred spot for some people.[6]

For residents and commercial drivers, the unpredictability of pedestrians dashing out in front of traffic presents a safety concern. Various proposals have been made to make the street safer for pedestrians by adding crosswalks, by installing bollards to prevent pedestrians from walking on the street, by widening sidewalks, and by removing traffic on Broadway.

Adding crosswalks will reduce the amount of j-walking while not necessarily stopping people from walking on the street all together. There is also an issue with painted lines in the historic

[6] The most common activities for the visitors were taking photographs (93%), visiting museums (89%) and shopping for souvenirs (85%). Source: KLGO Visitor Study, Summer 1998, p. 12.

district. Just as the street was paved to reduce the dust problem, crosswalks could be painted to increase safety. Line color doesn't need to be bright white; instead a muted or faded white that resembles old crosswalks could be used. It would blend in well from a distance with the asphalt pavement while still managing to be distinguishable up close by pedestrians. For example, the lines painted on Broadway for the 4th of July celebration do not seem to diminish the historic appearances at all (Photo 5). Alternatively, a concrete pad can serve as a crosswalk substitute. It's subtle enough to still maintain the historic appearance but distinctive enough from the street pavement. I found myself using the concrete pad as crosswalks a few times when I first moved to Skagway. However, there are already some concrete pads throughout the district that do not line up at the intersection. Moreover, the extent to which visitors will use them as crosswalks is unclear.

Installing devices to separate pedestrians from vehicles, such as bollards, would be most incompatible with the district's historical appearance. They're also unlikely to be effective or safe: pedestrians may still elect to enter the street at the intersection, only to find themselves corralled in by a barrier when they try to get out of the way of an oncoming car. Another idea that has been proposed would be to widen the sidewalks. This idea suggests that the existing sidewalks are not wide enough to accommodate the number of pedestrians, which is why there is such a spillover of pedestrians into the parking lanes on the street. Broadway's boardwalks are the most heavily used sidewalks in Skagway. When the congestion on these boardwalks stop the flow of traffic, pedestrians will take to the street to avoid the crowd or to pass slow-moving streams of pedestrians on the boardwalks. There are also pedestrians on wheels (wheelchairs and strollers) or on high heels who prefer the street over the boardwalk. However, even when the boardwalks are not crowded you can still find pedestrians on the street. What this suggests is that walking on the street could be, in some cases, a matter of choice, and not necessarily driven by the factor of overcrowding on the sidewalks. So widening the sidewalk would simply push these people further out on the street.

On a sub-conscious level, some people may find walking down Broadway quite appealing, for many probably would never have a chance to do so where they come from. Now that they are in a place where the street is primarily dominated by pedestrians, not cars, they may feel "empowered" somehow to be right on the street rather than be on the sidewalks. They know that they rule the street and like it or not, cars will watch out for them. I've seen a similar street dynamic in Taiwan where scooters out number the cars on some major streets and they literally take over—on both automobile and motorcycle lanes. It irks automobile drivers to have to share the lane and constantly watch out for them. There is something about being the dominant mode that gives a sense of majority rule.

As previously discussed the combination of low volume of traffic and the slow speed of vehicular movement does make Broadway safer than would be otherwise. Broadway at times may even resemble a "pedestrian mall" for most visitors. In contrast to what is perceived to be a safety issue, visitors on foot may feel quite safe standing in the middle of the street or crossing at will because they perceive very little risk, especially for visitors who come from big cities and are used to dealing with massive numbers of people and traffic. The Skagway historic district is a very friendly pedestrian mall in comparison. Most of the pedestrians I observed will get out of

the way when there are vehicles approaching, but sometimes a few will forget they are on the street, thereby causing traffic to slow down a bit.

TOURISM AND TRANSPORTATION

Why do some residents perceive there are transportation problems in Skagway? Skagwayans, I found, like many Americans everywhere, love driving their cars. Several times I have seen residents driving a mere block or two to do their errands. Sometimes they don't even turn off the engine when they "park" their cars. They are used to driving around their town and going about their business without any delay. Even in April, right before the tourist season starts, there is practically no traffic at all. So when the cruise ships arrive, local residents have to start adjusting their driving habits to accommodate visitors. This means that they will have to drive slower than usual, stop at intersections, wait a few seconds to turn, and simply have to break for visitors who are not paying attention. For some residents, the increase and change in pedestrian and vehicular traffic between the off season and the cruise ship season is simply too drastic. This may help explain some of the perceived transportation issues discussed earlier. Any change required in the way they drive, i.e., watching out for the pedestrians and searching for once-abundant parking space, can be perceived as a problem.

On the surface Skagway exhibits a classic tourist town syndrome. On the one hand, the town thrives on the wealth generated from tourism; on the other hand, it resents some of the consequences resulting from tourism—sharing the streets and parking lots with tourists, waiting for a table at a crowded restaurant, queuing in a long line for a cashier at the grocery store, and so on.

There is also an underlying current of discontent that helps explain why some transportation-related issues are highly contested. Amongst some residents there is a perception that the city sacrifices too much to accommodate the interests of seasonal businesses and overlooks the community's needs. For example, converting on-street parking to a loading/unloading zone is perceived as taking away residents' use of the street to accommodate certain private business operations. Even though the intention of establishing loading/unloading zone is to help reduce traffic congestion, the reasoning behind the change is sometimes not accepted at face value. Residents see tour buses pulling up to the loading/unloading zone and enjoy the convenience of transporting the visitors right to their very doorsteps; meanwhile they who call Skagway home have to park elsewhere. Sometimes perceived transportation problems are not really the issue; for residents, a sense of losing control and ownership over their town is what is at stake.

While residents are concerned about losing too much of their town to tourism, businesses are mostly concerned about enlarging their share of the tourism pie. It's not an exaggeration to say that in Skagway if there is an opportunity to make money it will be pursued; if there is a niche it will be filled. And like the gold rush days, travelers on foot still render a high demand in transportation services. Therefore, the business of transportation services is extremely competitive. For instance, the infamous "shark pit" phenomenon in the late 90s illustrates how fierce the competition can be. Tourists fresh off their ships used to be attacked or hawked by a dozen or so transportation providers competing for their business. The city government has since established sophisticated sets of resolutions and mandates to regulate aspects of the tourism industry, particularly regarding transportation issues. Nonetheless, one can still feel in the air a sense of anxiety among businesses who compete and strive to make maximum profits. What

gets imposed on the tourism industry is closely scrutinized by businesses—who gets to do what because of a rule or mandate matters a great deal to one's profit making.

For the city, the solution to the "shark pit" phenomenon is the Skagway Metropolitan and Regional Transit (SMART). Now travelers can be free from aggressive sale harassment at the dock and have the choice of taking the public transit to visit Skagway. However, for some businesses, the solution has not resulted in a level playing field. SMART is commonly referred to by some residents and business owners whom I spoke to as having a monopoly on in-town transportation service. This perception is generated mainly because of the fact that the SMART contract was renewed without competitive bids. In its original contract, SMART was set up to resemble a public transit—serving residents as well as tourists, having a regular year-round service, and a low fare ($1) charge per person. For some potential transportation providers, these components seemed prohibitive in terms of profit-making; hence, the original set-up of SMART deterred them from the outset of entering a bid.

SMART in its first year of service quickly evolved into an operation quite different from what the original contract entailed. For example, SMART stops running when the tourist season ends. In other words, SMART only serves during the tourist season even though the contract stipulated a year-round service. From the Skagway News publications, one can find discussions and debates regarding the bus service during the non-cruise ship season. There seems to be a constant battle between the current SMART operator and some residents who have year-round business and would like to have the bus service available to their customers even when there are no cruise ships.

Moreover, SMART has fixed routes, running between the waterfront and the historic district, that are strictly oriented towards serving the visitors from cruise ships, not residents of Skagway. Its semi-fixed route to the northern end of the town could potentially serve the residents, but it only runs when there are passengers waiting at the city hall stop.[7] Therefore, as a practical means of transportation, it is not really available to residents who live in the northern end of the town. Also, even if this was meant to be a fixed route system, there has never been any published time schedule for the bus service. So residents (including seasonal workers) who want to take the bus to work, for instance, would not be able to count on the bus to deliver them to work on time.

In addition, unlike a public transit, SMART's "fixed" routes are indeed quite malleable. By this I mean that it only runs the entire route when there is a demand. If there are no visitors waiting at the stops, the bus will not necessarily complete the route. In one of the transportation meetings, the current SMART operator admits that before 9 a.m. there is no point of running the entire route when no one is waiting to be picked up from the town to the dock. If all passengers get off the bus at the first stop, certainly the bus will return to the dock as soon as possible to transport more visitors to town. They are, after all, a for-profit entity and it doesn't make much business sense to run empty buses up and down Broadway in the early morning hours.

[7] The current SMART operator, Stuart Brown, has removed the semi-fixed route from the service area after a taxi service was granted a license in June 2005. His reason for the service removal is so he is not in competition with the taxi service. I suspect that the semi-fixed route is not as profitable to run as the fixed routes; therefore he is more than willing to give it up. Visitors who want to visit sites along the semi-fixed route now will have to hire a taxi that charges a much higher fee than the bus. In this case, both SMART and the taxi operator win while visitors lose out.

As it is now, providing a transporting service to the visitors, with a flexible schedule and malleable routes, SMART operates more like a private transporting carrier and less like a "public transit".[8] Yet, these evolutionary changes to the original contract are the reasons why SMART is able to make a profit, and the city, instead of having to subsidize it, receives a certain amount of payment from the contract. In other words, the changes enable the current operator to turn the SMART contract into a lucrative business opportunity. And now, with the fare increased from $1 to $1.50 per person, the SMART contract has become very appealing to other Skagway entrepreneurs who are eager to compete for a chance to operate SMART. Some residents also think that the city will likely get a better deal if the contract is competitively awarded instead of automatically reissued to the present operator whenever a contract expires. The perceived problem of an unlevel playing field is not the fault of the current SMART operator; what is to blame is the lack of open competition via a fair bidding process.

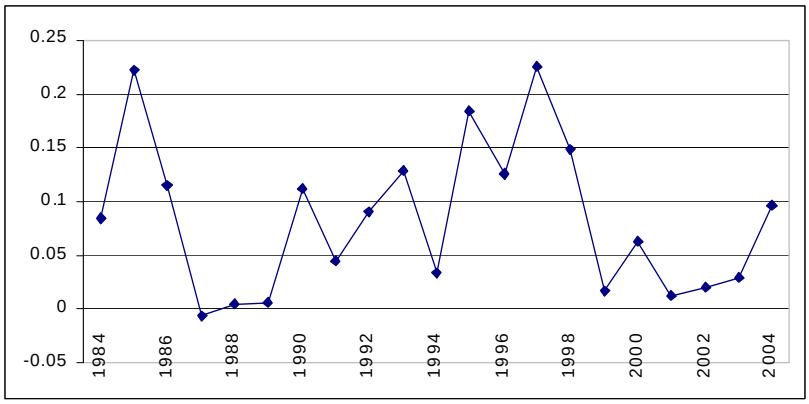
For other residents, their issues with SMART are more conceptual. This is understandable because what SMART is supposed to be is never clearly defined. The name SMART implies that it provides a city/public service to everyone, not just visitors but also the residents, and it services the *region*, not just the waterfront and the historic district. But if SMART is to be true to what it stands for, it will have published schedules, a year-round service, and fixed routes that serve residential area. SMART, then, will not be able to operate very efficiently, and like other public transit systems, it will likely require subsidies. Since few Skagwayans will likely advocate turning a profit-making transporting service into a subsidized public transit, it is imperative for the city of Skagway to clarify what SMART is supposed to be.

Visitation Projection

The SCVB-published statistics can provide us with some clues as to what visitation trends may occur in the near future. In 1983 there were 164,238 visitors recorded; in 2004 there were 857,405. The visitation certainly has been growing, and the increase is mainly due to the growth in the number of cruise ship passengers (Appendix D & E). However, the growth pattern has not been steady; there are some visible upward "surges" in the visitation (Figure 4).

[8] There are three elements that make a transporting carrier a public transit—it runs year-round, has published schedules and fixed routes. These are in place to make sure that transit users can rely on the service to go about their business—to go to work on time, to keep an appointment, etc. Public transit is usually subsidized because private operators cannot make a profit by adhering to these three elements.

Figure 4: Visitation Changes in Percentage, 1983 -2004



Again, cruise ship numbers play an important role in the changes. If we look at travel modes without cruise ships, we get an understanding of what has happened to other modes of travel throughout these years (Table 3). The numbers in red show the highest counts in each mode, and the highest total counts occurred in 1998. The AMHS had the lowest counts in 2004. The average count of travelers via the highway is about 80,000, and the counts have been below that for the past two years. The air travel though is the most unpredictable and has the smallest share. Overall, the total counts from the state ferry, the highway and the air have stayed above 100,000 throughout these years with an average of 120,613.

These statistics suggest that the visitation trend in the near future will be largely determined by the change in the cruise ship capacity. As it is now, on a peak day the port has reached its maximum capacity in terms of the size of ship that it can accommodate and the number of docks available. An increase in capacity will have to involve dredging and/or an additional dock. Because of the potential of a larger ship mooring at Broadway dock and the possibility of a 3rd berth at Railroad dock, an increase in visitation is foreseeable. After these changes the visitation number will then probably reach a ceiling.

Table 3: Visitation Counts Excluding Cruise Ships

Year	AMHS	HIGHWAY	AIR	TOTAL
1983	25,288	72,384	3,500	101,172
1984	25,196	79,215	3,750	108,161
1985	31,522	89,542	4,000	125,064
1986	30,981	91,908	4,250	127,139
1987	30,905	70,993	4,953	106,851
1988	31,481	74,614	5,957	112,052
1989	29,997	63,789	7,233	101,019
1990	33,234	63,237	4,799	101,270
1991	33,630	64,610	4,853	103,093
1992	37,216	79,946	7,947	125,109
1993	33,650	80,709	10,092	124,451
1994	34,270	81,172	10,000	125,442
1995	33,961	87,977	17,000	138,938
1996	35,760	86,536	20,721	143,017
1997	27,659	91,849	11,466	130,974

Year	AMHS	HIGHWAY	AIR	TOTAL
1998	31,324	100,784	20,679	152,787
1999	31,467	92,291	15,963	139,721
2000	30,732	94,925	15,626	141,283
2001	23,232	82,629	7,479	113,340
2002	27,148	87,851	5,641	120,640
2003	23,814	74,750	6,340	104,904
2004	23,171	77,837	6,046	107,054
Average	30,256	81,343	9,013	120,613

TRAFFIC FORECAST

Based on the current visitor travel pattern, more cruise ship passengers will mean more pedestrians and more commercial buses and SMART service. According to my one-week field observations, the number of pedestrians during a peak hour on a peak day averages 2,647 on Broadway; that is about 22 people per minute walking past an imaginary line (Appendix F).[9] To put this number in context, imagine a single-file steady stream of pedestrians passing by the entrance of AB Hall, each passing about 3 seconds apart. Because most of the time people walk in pairs or in groups the intervals between surges of pedestrians are usually much longer.

The current difference between low days and peak days is a good yard stick for what the pedestrian and commercial traffic may be like in the event of an increase in cruise ship capacity. The average low days cruise ship capacity is 2,501 vs. the average of peak days of 8,151 (Table 4). If the capacity is increased by 2,500 (a larger ship at Broadway dock and an additional ship at the 3rd berth of Railroad dock), the number of pedestrians on a peak day during a peak hour will be about 3,491 (the low day average added to the peak day average).

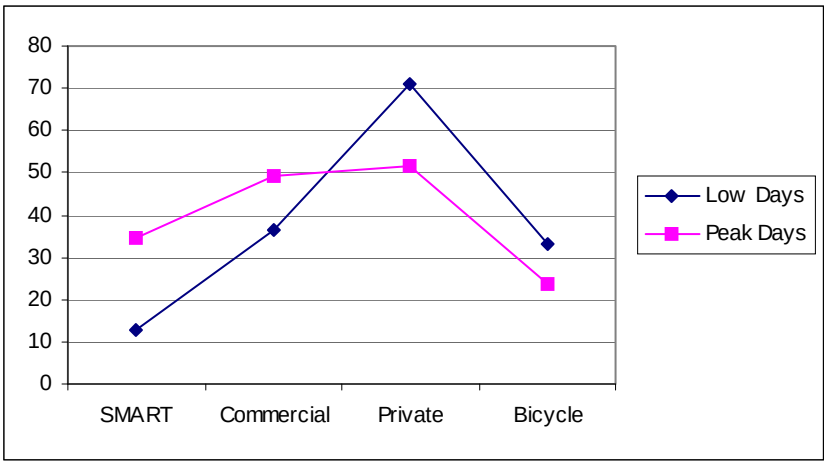
Table 4: Projected Average Number of Pedestrians during Peak Hours

	Low Days	Peak Days
Average cruise ship capacity	2,501	8,151
Average hourly pedestrian counts	844	2,647
If cruise ship capacity increases by about 2,500, add		844
Average number of pedestrians per hour on Broadway at new peak		**3,491**
Projected average number of pedestrians per minute on one side		**29**

It is interesting to note that private vehicles and bicycles have a higher count during the low days, and commercial vehicles and SMART buses have a higher count during the peak days (Figure 5).[10] My predecessor's vehicle counts also reveal an interesting traffic pattern—there is a significant increase in the amount of private vehicles and bicycles after 1:30 pm. In fact, the average count after peak hours is higher than the average during the peak hours, and private vehicles and bicycles are the main contributors to the higher average (Appendix H).

Figure 5: Vehicle Counts Low Days vs. Peak Days

[9] Anyone who walked pass an imaginary line in front of me was counted as 1. Pedestrians who were walking towards the east side of the street were not counted, and those walking towards the west side of the street were.
[10] For the complete counts by types of vehicles, see Appendix G.



To project the number of commercial and SMART bus traffic increases due to additional cruise ship passenger capacity, the ratio of number of visitors vs. vehicles is needed. From my field observations, the difference between low days and peak days in the average number of commercial/SMART bus counts is 35. If we divide this number by the difference in the average numbers of cruise ship capacity between low and high days, we get the average number of visitors per vehicle increased (Table 5). According to this ratio, with 2,500 additional cruise ship passengers, there will be 15 more commercial/SMART buses. If all the projected additional vehicles occur during a peak hour on a peak day, Broadway will have an average of 177 vehicles per hour, about 2.95 vehicles per minute—not a significant change to current traffic flow.

Table 5: Projected Number of Vehicles per Peak Hour

	Low Days	Peak Days	Difference
Average cruise ship capacity	2,501	8,151	5,650
Average Commercial/SMART Counts (rounded)	50	85	35
Average number of visitors per vehicle increased			163
If cruise ship capacity increased by about 2,500 (2,500/163)			15
Current average number of vehicle per peak hour			162
Projected average number of vehicle per peak hour on Broadway			**177**
Projected average number of vehicles per minute			**2.95**

Recommendations:

Overall, the existing transportation infrastructure is able to adequately accommodate the number of visitors to date. Even with an increase in the number of pedestrians, the traffic volume in the historic district will still be relatively low—about 3,491 pedestrians and 177 vehicles per peak hour. Therefore, I do not perceive any big changes needed in the near future. Nonetheless, a few actions can be taken to make the traffic situation even better than it is now.

PARKING

My one-month random samples of parked vehicles on Broadway show that there is ample short-term parking available. The regular users are the Days of 98 Show, the Skagway Air and the Classic Car Rental. Except Skagway Air, the commercial vehicles parked on Broadway seem to primarily serve an advertisement purpose, which was not the intent of the short-term parking—which is to allow visitors and residents to park while they shop. In the event that parking on

Broadway becomes a problem, the city can always consider converting more segments on Broadway to 20-minute instead of 1-hour parking zones.

There is a shortage for bicycle parking. Bicycles are frequently seen chained to stop signs and stairways, which can become a hazard for pedestrians and drivers. Bicycle racks are needed near the west side of Spring and 2nd, behind the News Depot, and the west side of 4th and Broadway for employees working nearby (Photo 6 & 7).

SIGNAGE

There is one out-dated centennial celebration sign and a few centennial theme banners along side Congress Way that can be removed to reduce the clutter of official and commercial signs throughout the town. Moreover, the map of "Welcome to Skagway Visitor Information" located at the Centennial Park is rarely used because it faces the town instead of the docks. It can be turned around to face the docks or removed.

A map of the waterfront schematic can be installed for pedestrian use at the intersection of Broadway and Lost Road to show there is no access from the ferry terminal to Railroad dock. Ships at Railroad Dock look close and accessible from the ferry terminal (Photo 8). Even though there are directional signs pointing to Railroad Dock, visitors still mistakenly walk along the east side of Broadway towards the ferry dock in anticipation of accessing their ships on Railroad Dock.

The existing directional sign for Whitehorse could be relocated closer to the edge of the street and closer to the intersection of 1st and Broadway to reduce the number of drivers who unintentionally continue on Broadway. As it is now, the sign is offset too much to inform drivers of the 1st Avenue turnoff (Photo 9).

REST AREAS

Benches and picnic tables are popular places for visitors to rest their tired feet, to plan out their itinerary for the day, or to rendezvous with their friends and family or simply to people watch. Right now visitors stand and crowd the boardwalks because there are very few places off the boardwalks for them to conduct these activities. I observed the existing benches quite often occupied, especially during the peak hours. I think visitors will welcome more of them in the historic district, especially the elderly and families with young children. The additional rest areas ideally should be on the side streets or near Broadway so they can also serve as release valves for Broadway. I have identified the following locations:

Possible locations for benches: the breezeway between the park VC and the WP&YR Train Shoppe; both sides of 2nd west of Broadway (Red Onion Saloon and the Loom); along the north side of Mascot building; south side of 4th (Del Sol and Pantheon Saloon); south side of 5th east of Broadway (Knorr Buildings); and south side of 6th (Eagle's Hall and the Fleece Company).

Possible locations for picnic tables: the vacant lot between 3rd and 4th on west side of Broadway (between Dedman's Photo and Pantheon Saloon); the vacant lot on the west side of Pantheon Saloon, the stretch of green space north of Boss Bakery, and east side of Goldberg Cigar Store.

Linkages can be developed between the two lots on the south side and the west side of the Pantheon building by partially removing the existing fence to "reveal" additional seating area

further off Broadway (Photo 10). The same area linkage can be developed for the green space next to Boss Bakery, the green area around where the Ice House is standing, and all the way to the east side of Goldberg building.

STREET FURNITURE

The new city trash cans are placed on the boardwalks, which significantly reduce the walking space for pedestrians. Some of the trash cans obtrude way out on the boardwalks so that pedestrians frequently have to merge to avoid walking into them. Moreover, some of them have become gathering places for smokers. Alternatively, the side streets or alleys may be good locations for their placements.

ALTERNATIVE WALKWAY INTO THE HISTORIC DISTRICT

The Seawalk project will construct a pedestrian walkway that begins at the Railroad Dock and ends at the northern edge of the small boat harbor parking lot. The walkway will then link to the existing sidewalk from that point on. An alternative walkway can be constructed to prevent the pedestrian traffic from converging back onto the existing sidewalk, and help redirect some foot traffic into the Centennial Park (Photo 11).

Moreover, the walkway can loop around the Pullen Pond and connect to the Creek further north. In the *Historic Transportation Resources in Skagway and Dyea* (April, 2005), Dr. Hill points out that there is no interpretation done regarding the historic significance of the waterfront and Pullen Creek, which was part of the early transportation system. Interpretive programs regarding the history of transportation in Skagway can be developed along the alternative walkway connecting the Seawalk project and the historic district.

Because the historic district is mostly occupied by jewelry stores and trinket shops, the city can turn the vacant lot south of the Centennial Park and west of the Pullen Pond into a family and friends gathering place. This area can serve as an extension of the Centennial Park as well as a linkage between the two existing city parks. Ideas include outdoor and hands-on exhibits (e.g. one year supply of goods), junior ranger or other education programs under a tent, a tent city marketplace (maybe a Harriet "Ma" Pullen Pie shop), or simply more rest areas. Visitors who are not interested in shopping and/or families with young children will particularly welcome such an alternative.

SIDEWALK EXTENSION

An extension of sidewalk can be constructed to link the existing sidewalk from south of the loading zone on 1st and Broadway to the existing sidewalk on the Westside (Photo 12). This segment will serve visitors to and from the ferry terminal, Broadway dock and Ore dock. According to my observations, visitors frequently cross near this intersection on Broadway, especially when returning to their ships. The end of sidewalk south of the loading zone prompts visitors to cross Broadway (diagonally) between 1st and the train tracks leading towards Ore dock and Broadway dock. If the sidewalk could be extended to the train tracks, then visitors will likely stay on the east side of the sidewalk, then cross the street further south rather than near the intersection of 1st and Broadway. The extension will keep pedestrians on the sidewalk and facilitate vehicular turning at this particular intersection.

DANGEROUS CORNER

To get on the highway or go to town, vehicles from the airport and from Ore Dock have to turn onto State Street. The corner that directly leads to State is a narrow 2-lane street, and is

frequently shared with pedestrians from Ore Dock (Photo 13). To make the corner safer, a sidewalk on the east side of the street could be constructed.

INTERSECTIONS ON STATE STREET

Minimum intersection clearance between 3rd and 5th could be increased to make turning into State Street safer. The existing minimum requirements do not provide adequate unobtrusive view, especially when there are large vehicles parked at the corners, e.g. RVs.

DYEA UNIT

Skagway's competitive twin city during the Gold Rush days, Dyea hasn't been affected so much by tourism. However, its physical appearance has also undergone dramatic changes since the Gold Rush days. The forces of nature have taken over the town site and the traces of thousands of residents of this Gold Rush town are mostly undetectable from the surface.

Currently, park visitors without personal vehicles have to rely on commercial tours, car or bike rentals to get to Dyea. This summer a taxi service is also available. However, these services charge a substantially higher fee than would a public transit service. The park is concerned about whether the current transportation options available are adequate for visitors. Is public transit needed for park visitors to Dyea? Since there was no study assessing the public transit need between the Skagway and Dyea units, a survey was implemented to gauge this demand.

The survey, conducted at the KLGO Visitor Center during the months of June and July, 2005, shows that nearly half of the visitors to Dyea arrived at Skagway via the highway in their personal vehicles (47%), and about 30% via cruise ships. Tourists traveling via highway also are most likely to visit Dyea—46% of them plan to visit Dyea—while only 7% of the cruise ship passengers are planning to do so (Table 6).[11] Most noticeably, 16% of the total respondents answered that they are planning to visit Dyea. The official visitation number published by SCVB for 2005 is not yet available, so we use the number for 2004 instead. Dyea would have at least 141,330 visitors this summer according to the survey. This number is obviously too high. To get a better idea of how many visitors actually visit Dyea/Chilkoot, I compiled a visitation number based on the Park's Incidental Business Permittees' client counts (available from 2000 through 2004) as well as an estimation of Chilkoot Trail hiker permits sold, and an approximation of the number of campers at Dyea town site (Table 7).

Table 6: Planning to Visit Dyea by Modes of Arrivals

How did you arrive in Skagway?	# of Respondents	VisitDyea=Yes	% of Respondents	% Share
Air	2	1	50%	2%
Cruise	261	18	7%	30%
Private Vehicle via Highway	61	28	46%	47%
State Ferry	27	10	37%	17%
Train	13	3	23%	5%
Total	364	60	16%	100%

[11] Though the survey shows 50% of the visitors arrived by air who are also planning to visit Dyea, I do not feel comfortable using this number because the number of respondents is simply too low. For a complete survey instrument and results, see Appendix J.

Table 7: Dyea Town Site/Chilkoot Trail Visitor Counts (approximate)[12]

Year	KLGO IBP Client Counts (excluding backpacking)	Trail Permits (Approximate)	No. of Campers (Approximate)	Total Visitor Counts
2000	12,213	3,000	1,310	16,523
2001	15,294	3,000	857	19,151
2002	14,603	3,000	1,331	18,934
2003	15,872	3,000	1,968	20,840
2004	19,195	3,000	2,365	24,560
			Average	20,002

Note: 2002 KLGO IBP Client Counts are estimated because the number for guided horse tours is not available.

From the compilation, the number of total visitors to Dyea averaged around 20,000 annually since the year 2000. The percentage shares relative to the visitation numbers in Skagway seem to remain steady throughout these five years, too (Table 8). The percentages vary from 2.25% to 2.86%, which are much lower than the 16% indicated in the survey. A reasonable explanation for this disparity in numbers may be due to the fact that the survey measures the number of visitors "planning" to visit whereas the compiled number reflects more or less the actual number.

Table 8: Dyea Share of Visitation Counts in Skagway

Year	Dyea Visitor Counts	Total Visitor Counts (SCVB)	Percentage Share of Total Visitor Counts
2000	16,523	734,515	2.25%
2001	19,151	743,739	2.57%
2002	18,934	758,793	2.50%
2003	20,840	781,435	2.67%
2004	24,560	857,405	2.86%

When asked how likely they would be to take public transit to visit Dyea that would cost $2 one way, about 30% of the respondents answered "definitely would" (Table 9). Compared to 16% of the respondents who plan to visit Dyea, that's a 14% increase in the number of visitors who would visit Dyea. Noticeably, cruise ship passengers would be the main bus riders if a transit service were available. According to the survey result, they comprise about 73% of the respondents who definitely would take the bus. Visitors traveling in their own vehicles, and ferry passengers, however, responded less favorably towards a transit service—the number of them who would ride the bus to Dyea is less than the number of them planning to visit Dyea.

[12] The number of campers is derived from the total number of RV & Tent camper night stays divided by 1.24—an average overnight stay per person between June 26-July 9, 2005.

Table 9: Likelihood by Modes of Arrivals

How did you arrive in Skagway?	# of Respondents	Likelihood*	% of Respondents	% Share
Air	2	2	100%	2%
Cruise	261	80	31%	73%
Private Vehicle	61	16	26%	15%
State Ferry	27	7	26%	6%
Train	13	5	38%	5%
Total	364	110	30%	100%

*Only the respondents who "definitely would" take the public transit are counted here. Four respondents who arrived via other modes are excluded in the table.

The result seems to suggest that there would be a huge increase in visitation to Dyea if public transit were in place. If 30% of all visitors take public transit to visit Dyea, using the 2004 visitation number, there would be 259,106 people going to Dyea by bus. This is more than ten times current visitation. From the result of the survey question asking respondents whether they plan to visit Dyea vs. the estimated actual visitor counts of Dyea, we learn that there is a difference in what people plan to do and what they actually do. We all like to keep our options open, but whether or not we follow through is another story. This raises the question of an inherent bias built into the survey. For one thing, all surveys were conducted at the Park's visitor center. It seems reasonable to suggest that the respondents are already more prone to visiting other park units than those who do not use the Park's facilities. In other words, visitors who are more "park-inclined" may be over-sampled in the survey.

This survey result also seems to imply that maybe visitation increase can be artificially generated if more options are provided to visitors, especially a cheap one—a $2 bus ride to a natural preserve is not a bad price. The Park can discuss whether increasing Dyea visitation is one of its goals. Ultimately, the question of whether a transit service is needed between Skagway and Dyea may boil down to whether the Park is interested in providing a transportation service itself or choosing its own outside transit service provider via a RFP. Because there is no guarantee that the extended service area will generate profits for any operator, the Park would have to subsidize any shortfalls. As previously discussed, the existing SMART contract has a for-profit entity operating the transit service and was renewed without a competitive bid. For this reason, it may be hard for KLGO to justify subsidizing the current operator for the extended service to Dyea.

As it is, will the visitation increase regardless? According to the survey result, 65% of the Dyea visitors arrived at Skagway either via highway, the state ferry (with and without a vehicle) or air (Table 6). From the SCVB total visitation counts, the number of visitors by these modes of arrival has not seen big changes since 1983 (Table 3). Because of the limited number of campsites and the cap on the number of trail permits issued each year, the number of campers and hikers will more or less remain steady as well. Therefore any significant increase in visitation in the near future, without additional public transit, would be quite unusual.

For now, the transportation services available to tourists do not seem to be lacking. Visitors do have choices among tours, car/bike rentals and taxi service. Though there is no regular bus service to the area, visitors at least can compare options and find their way there. As Dr. Hill points out "the contemporary experience of traveling to Dyea is similar to the experience of

visitors during the Gold Rush era: if you're traveling by boat, you're dropped off in Skagway and you've got to find a way to Dyea on your own" (p.15). One can even argue that finding your own way to Dyea is part of the desired experience.

Conclusion

There seems to be two distinct dynamics at play in Skagway when it comes to transportation. On one level, Skagway presents a typical case where the tourism industry largely dictates transportation systems. Because Skagwayans, regardless of whether they are year-round or seasonal residents, are so tied in with tourism, any changes to the existing transportation structure are bound to affect someone and their business. This can quickly turn a proposed change into a serious economic issue.

On the other level, what constitutes a traffic problem for Skagwayans may differ greatly from how it would be perceived by outsiders, particularly residents of larger cities or suburban areas. Though the study may suggest that the amount of pedestrian and vehicular traffic does not seem to cause any problems, for some Skagwayans, their perceptions of transportation problems are nonetheless still very real, at least to them. As one of the Council members once told me, "This is Alaska."—implying Skagway is not like other places in the lower forty-eight states. There are regional characteristics that lead Skagwayans to reside here, one of which is that Skagway represents an antithesis of big city living. What this may translate to is that even a small amount of traffic is perceived to threaten this very life style.

Skagwayans are caught in between these two opposing dynamics: their livelihood closely depends on the tourism—which brings tourists, their cars, and buses that serve them; and their pursuit to maintain a small town atmosphere of the place they call home.

If there are no sudden changes in the cruise ship port of calls, Skagway will likely remain a thriving tourist town. Any perceived and/or real transportation issues resulting from tourism will probably remain for some Skagwayans, no matter what measures are finally adopted. Although my study shows the amount of tourism-related traffic posing no problem, and 97% of the survey respondents concur that there is no transportation problems at all in Skagway (Appendix I & J), any persistent notion of transportation problems amongst Skagwayans will have to be resolved according to Skagwayan standards. At the end of the day, they are the ones who are affected most deeply by the conditions. And based on my interactions and experiences with Skagwayans, I have no doubt that their resourcefulness and creativity will help them find resolutions that suit the identity of Skagway.